produced water storage tank interconnected with the produced oil storage tanks through a closed-vent system to:

(i) An operating system designed to recover and inject the natural gas emissions into a natural gas gathering pipeline system for sale or other beneficial purpose; or

(ii) An enclosed combustor or utility flare capable of reducing the mass content of VOC in the natural gas emissions vented to the device by at least 98.0 percent or greater and operated as specified in § 49.144(c) and § 49.145.

(iii) If the uncontrolled potential to emit VOCs from the aggregate of all produced oil storage tanks and produced water storage tanks interconnected with produced oil storage tanks at an oil and natural gas production facility is less than, and reasonably expected to remain below, 20 tons in any consecutive 12-month period, then, upon written approval by the EPA the owner or operator may use a pit flare, an enclosed combustor or a utility flare that is capable of reducing the mass content of VOC in the natural gas emissions from the storage tanks vented to the device by only 90.0 percent.

(e) In the event that pipeline injection of all or part of the natural gas collected in an operating system designed to recover and inject natural gas becomes temporarily infeasible and there is no operational enclosed combustor or utility flare at the facility, the owner or operator must route the natural gas that cannot be injected through a closed-vent system to a pit flare operated as specified in § 49.144 and § 49.145.

(f) Produced oil storage tanks and any produced water storage tanks interconnected with produced oil storage tanks subject to and controlled under the requirements specified in 40 CFR part 60, subpart OOOO are considered to meet the requirements of § 49.143(d)(2). No further requirements apply for such storage tanks under § 49.143(d)(2).

[77 FR 48893, Aug. 15, 2012]

§ 49.144 Control equipment requirements.

(a) *Covers.* Each owner or operator must equip all openings on each produced oil storage tank and produced water storage tank interconnected with produced oil storage tanks with a cover to ensure that all natural gas emissions are efficiently being routed through a closed-vent system to a vapor recovery system, an enclosed combustor, a utility flare, or a pit flare.

(1) Each cover and all openings on the cover (*e.g.*, access hatches, sampling ports, pressure relief valves (PRV), and gauge wells) shall form a continuous impermeable barrier over the entire surface area of the produced oil and produced water in the storage tank.

(2) Each cover opening shall be secured in a closed, sealed position (*e.g.*, covered by a gasketed lid or cap) whenever material is in the unit on which the cover is installed except during those times when it is necessary to use an opening as follows:

(i) To add material to, or remove material from the unit (this includes openings necessary to equalize or balance the internal pressure of the unit following changes in the level of the material in the unit);

(ii) To inspect or sample the material in the unit; or

(iii) To inspect, maintain, repair, or replace equipment located inside the unit.

(3) Each thief hatch cover shall be weighted and properly seated.

(4) Each PRV shall be set to release at a pressure that will ensure that natural gas emissions are routed through the closed-vent system to the vapor recovery system, the enclosed combustor, or the utility flare under normal operating conditions.

(b) *Closed-vent systems.* Each owner or operator must meet the following requirements for closed-vent systems:

(1) Each closed-vent system must route all produced natural gas and natural gas emissions from production and storage operations to the natural gas sales pipeline or the control devices required by paragraph (a) of this section.

(2) All vent lines, connections, fittings, valves, relief valves, or any other

appurtenance employed to contain and collect natural gas, vapor, and fumes and transport them to a natural gas sales pipeline and any VOC control equipment must be maintained and operated properly at all times.

(3) Each closed-vent system must be designed to operate with no detectable natural gas emissions.

(4) If any closed-vent system contains one or more bypass devices that could be used to divert all or a portion of the natural gas emissions, from entering a natural gas sales pipeline and/or any control devices, the owner or operator must meet one of the following requirements for each bypass device:

(i) At the inlet to the bypass device that could divert the natural gas emissions away from a natural gas sales pipeline or a control device and into the atmosphere, properly install, calibrate, maintain, and operate a natural gas flow indicator that is capable of taking continuous readings and sounding an alarm when the bypass device is open such that natural gas emissions are being, or could be, diverted away from a natural gas sales pipeline or a control device and into the atmosphere;

(ii) Secure the bypass device valve installed at the inlet to the bypass device in the non-diverting position using a car-seal or a lock-and-key type configuration;

(iii) Low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, and safety devices are not subject to the requirements applicable to bypass devices.

(c) *Enclosed combustors and utility flares.* Each owner or operator must meet the following requirements for enclosed combustors and utility flares:

(1) For each enclosed combustor or utility flare, the owner or operator must follow the manufacturer's written operating instructions, procedures and maintenance schedule to ensure good air pollution control practices for minimizing emissions;

(2) For each enclosed combustor or utility flare, the owner or operator must ensure there is sufficient capacity to reduce the mass content of VOC in the produced natural gas and natural gas emissions routed to it by at least 98.0 percent for the minimum and maximum natural gas volumetric flow rate and BTU content routed to the device;

(3) Each enclosed combustor or utility flare must be operated to reduce the mass content of VOC in the produced natural gas and natural gas emissions routed to it by at least 98.0 percent;

(4) The owner or operator must ensure that each utility flare is designed and operated in accordance with the requirements of 40 CFR 60.18(b) for such flares.

(5) The owner or operator must ensure that each enclosed combustor is:

(i) A model demonstrated by a manufacturer to the meet the VOC destruction efficiency requirements of §§ 49.140 through 49.147 using the procedure specified in 40 CFR part 60, subpart OOOO at § 60.5413(d) by the due date of the first annual report as specified in § 49.147(b); or

(ii) Demonstrated to meet the VOC destruction efficiency requirements of §§ 49.140 through 49.147 using EPA approved performance test methods specified in 40 CFR part 60, subpart OOOO at § 60.5413(b) by the due date of the first annual report as specified in § 49.147(b); or

(iii) Until such time that 40 CFR part 60, subpart OOOO is promulgated, demonstrated to meet the VOC destruction efficiency requirements of §§ 49.140 through 49.147 by using the EPA approved performance test methods specified in 40 CFR part 63, subpart HH at § 63.772(e)(1)(i) through (iii) for hazardous air pollutants, by the due date of the first annual report as specified in § 49.147(b).

(6) The owner or operator must ensure that each enclosed combustor and utility flare is:

(i) Operated properly at all times that natural gas is routed to it;

(ii) Operated with a liquid knock-out system to collect any condensable vapors (to prevent liquids from going through the control device);

(iii) Equipped with a flash-back flame arrestor;

(iv) Equipped with one of the following:

(A) A continuous burning pilot flame, a thermocouple, and a malfunction

alarm and remote notification system if the pilot flame fails.

(B) An electronically controlled auto-ignition system with a malfunction alarm and remote notification system if the pilot flame fails while produced natural gas or natural gas emissions are flowing to the enclosed combustor or utility flare;

(v) Equipped with a continuous recording device, such as a chart recorder, data logger or similar device, or connected to a Supervisory Control and Data Acquisition (SCADA) system, to monitor and document proper operation of the enclosed combustor or utility flare;

(vi) Maintained in a leak-free condition; and

(vii) Operated with no visible smoke emissions.

(d) *Pit Flares.* Each owner or operator must meet the following requirements for pit flares:

(1) The owner or operator must develop written operating instructions, operating procedures and maintenance schedules to ensure good air pollution control practices for minimizing emissions from the pit flare based on the site-specific design.

(2) The owner or operator must only use a pit flare for the following operations:

(i) To control produced natural gas and natural gas emissions during well completion operations or recompletion operations;

(ii) To control natural gas emissions in the event that natural gas recovered for pipeline injection must be diverted to an emergency control device because injection is temporarily infeasible and the enclosed combustor or utility flare installed at the oil and natural gas production facility is not operational. Use of the pit flare for this situation is limited to a maximum of 500 hours in any twelve (12) consecutive months during periods when pipeline injection has become temporarily infeasible and no enclosed combustor or utility flare installed at the facility is operational; or

(iii) Control of standing, working, breathing, and flashing losses from the produced oil storage tanks and any produced water storage tank interconnected with the produced oil storage tanks if the uncontrolled potential VOC emissions from the aggregate of all produced oil storage tanks and produced water storage tanks interconnected with produced oil storage tanks is less than, and reasonably expected to remain below, 20 tons in any consecutive 12-month period.

(3) The owner or operator must only use the pit flare under the following conditions and limitations:

(i) The pit flare is operated to reduce the mass content of VOC in the produced natural gas and natural gas emissions routed to it by at least 90.0 percent;

(ii) The pit flare is operated in accordance with the site-specific written operating instructions, operating procedures, and maintenance schedules to ensure good air pollution control practices for minimizing emissions;

(iii) The pit flare is operated with no visible smoke emissions;

(iv) The pit flare is equipped with an electronically controlled auto-ignition system with a malfunction alarm and remote notification system if the pilot flame fails;

(v) The pit flare is visually inspected for the presence of a pilot flame anytime produced natural gas or natural gas emissions are being routed to it. Should the pilot flame fail, the flame must be relit as soon as safely possible and the electronically controlled auto-ignition system must be repaired or replaced before the pit flare is utilized again; and

(vi) The owner or operator does not deposit or cause to be deposited into a flare pit any oil field fluids or oil and natural gas wastes other than those designed to go to the pit flare.

(e) *Other Control Devices.* Upon written approval by the EPA, the owner or operator may use control devices other than those listed above that are capable of reducing the mass content of VOC in the natural gas routed to it by at least 98.0 percent, provided that:

(1) In operating such control devices, the owner or operator must follow the manufacturer's written operating instructions, procedures and maintenance schedule to ensure good air pollution control practices for minimizing emissions; and

(2) The owner or operator must ensure there is sufficient capacity to reduce the mass content of VOC in the produced natural gas and natural gas emissions routed to such other control devices by at least 98.0 percent for the minimum and maximum natural gas volumetric flow rate and BTU content routed to each device.

(3) The owner or operator must operate such a control device to reduce the mass content of VOC in the produced natural gas and natural gas emissions routed to it by at least 98.0 percent.

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§ 49.145 Monitoring requirements.

(a) Each owner and operator must measure the barrels of oil produced at the oil and natural gas production facility each time the oil is unloaded from the produced oil storage tanks using the methodologies of tank gauging or positive displacement metering system, as appropriate, as established by the US Department of the Interior's Bureau of Land Management at 43 CFR part 3160, in the ''Onshore Oil and Gas Operations; Federal and Indian Oil & Gas Leases; Onshore Oil and Gas Order No. 4; Measurement of Oil.''

(b) Each owner or operator must monitor the hours that each pit flare is operated to control natural gas emissions in the event that natural gas recovered for pipeline injection must be diverted to an emergency control device because injection is temporarily infeasible and the enclosed combustor or utility flare installed at the oil and natural gas production facility is not operational.

(c) Each owner or operator must monitor the volume of produced natural gas sent to each enclosed combustor, utility flare, and pit flare at all times. Methods to measure the volume include, but are not limited to, direct measurement and gas-to-oil ratio (GOR) laboratory analyses.

(d) Each owner or operator must monitor the volume of standing, working, breathing, and flashing losses from the produced oil and produced water storage tanks sent to each vapor recovery system, enclosed combustor, utility flare, and pit flare at all times. Methods to measure the volume include, but are not limited to, direct measurement or GOR laboratory analyses.

(e) Each owner or operator must perform quarterly visual inspections of tank thief hatches, covers, seals, PRVs, and closed vent systems to ensure proper condition and functioning and repair any damaged equipment. The quarterly inspections must be performed while the produced oil and produced water storage tanks are being filled.

(f) Each owner or operator must perform quarterly visual inspections of the peak pressure and vacuum values in each closed vent system and control system for the produced oil and produced water storage tanks to ensure that the pressure and vacuum relief set-points are not being exceeded in a way that has resulted, or may result, in venting and possible damage to equipment. The quarterly inspections must be performed while the produced oil and produced water storage tanks are being filled.

(g) Each owner or operator must monitor the operation of each enclosed combustor, utility flare, and pit flare to confirm proper operation as follows:

(1) Continuously monitor the enclosed combustor, utility flare, and pit flare operation, using a malfunction alarm and remote notification system for failures, and checking the system for proper operation whenever an operator is on site, at a minimum quarterly;

(2) Continuously monitor all variable operational parameters specified in the written operating instructions and procedures;

(3) Using EPA Reference Method 22 of 40 CFR part 60, Appendix A, confirm that no visible smoke emissions are present, except for periods not to exceed a total of 2 minutes during any hour, during operation of any enclosed combustor, utility flare, or pit flare whenever an operator is on site; at a minimum quarterly. The observation period shall be 1 hour; and

(4) Respond to any observation of improper monitoring equipment operation or any pilot flame failure alarm and ensure the monitoring equipment is returned to proper operation and/or